

## SPECIFICATION

### TITLE

### METHOD FOR UPDATING CALL REDIRECTION DESTINATIONS IN A COMMUNICATION NETWORK

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### BACKGROUND OF THE INVENTION

#### Field of the Invention

The present invention relates, generally, to a method for updating call redirection destinations in a communication network and, more particularly, to a method for cross-communication-system updating of call redirection destinations  
10 used for team functions in a communication network.

#### Description of the Prior Art

Setting up integrated executive-secretary systems makes team functions available in a private branch exchange. When an integrated executive-secretary system is set up, selected subscriber lines are combined into an executive-secretary  
15 group, the role of the subscriber lines is defined and the relationships between the individual subscriber lines within the executive-secretary group is stipulated. The definable roles are manager, secretary and stand-in secretary. The relationships between the subscriber lines within an executive-secretary group are stipulated by allocating a manager subscriber line to a secretary subscriber line, or a secretary  
20 subscriber line to a stand-in secretary subscriber line.

In the HICOM communication system from Siemens, a system-internal manager and secretary are available with a maximum of four manager telephones and a maximum of two secretary telephones per executive-secretary system (HICOM 300E V 2.0, description of service features, section 4.30 and section 6.3.1,  
25 04.23.1999, Siemens reference number: P31003-G1036-1,100-3-18). In a standard operating mode, a call directed to a manager telephone is switched to a first secretary telephone and is signaled on the manager telephone and possibly on a further secretary telephone. The call can be accepted both from the manager telephone and from the further secretary telephone. After call redirection to the manager telephone,  
30 in a further operating mode, a call directed to the manager telephone is switched directly to the latter and is possibly signaled on the secretary telephones. The respective operating mode and the respective call redirection are signaled on the

manager telephone and on the associated secretary telephones. To date, the team function for an executive-secretary system has been available only within a private branch exchange.

- The present invention, therefore, is directed to a method for cross-  
5 communication-system updating of call redirection destinations used for team functions in a communication network.

#### SUMMARY OF THE INVENTION

Accordingly, pursuant to the method of the present invention, a call redirection destination which has been changed by a user entry on a first subscriber 10 line is stored for a second subscriber line in an associated memory together with a point of origin of a call redirection as call redirection information. In this context, the second subscriber line forms the point of origin of the call redirection. As such, the user entry on the first subscriber line selects a new call redirection destination for the second subscriber line.

15 In addition, a memory associated with a subscriber line is a memory storing information associated with the subscriber line. The stored call redirection information is sent to a control unit associated with the second subscriber line as point of origin of the call redirection. The control unit does not have to be exclusively associated with the second subscriber line, but rather can perform 20 corresponding functions for other subscriber lines as well. The control unit checks whether a call redirection indicated by the call redirection information has already been set up, and a call redirection is set up on the basis of the result of the check.

One fundamental aspect of the method according to the present invention can be regarded as the dynamic updating of the call redirection information for the 25 second subscriber line as point of origin of a call redirection. An updated call redirection destination can, thus, be always indicated on a manager telephone associated with the second subscriber line. In addition, a call redirection which has been set up to date can be reprogrammed from a secretary telephone associated with the first subscriber line via user entry, so that the first subscriber line becomes the 30 new network-wide call redirection destination of a call redirection originating from the second subscriber line. This can be signaled on the manager telephone on the basis of the dynamically updated call redirection information. In addition, a

network-wide stand-in destination can be determined for the first subscriber line from a secretary telephone, wherein the stand-in destination becomes the new call redirection destination for calls directed to the respective manager telephone.

In accordance with one preferred embodiment of the method according to the present invention, the call redirection information sent to the control unit is stored in a memory associated with the second subscriber line on the basis of the result of the check. By way of example, this allows the call redirection information to be indicated on a subscriber terminal associated with the second subscriber line.

In one further embodiment of the method according to the present invention, in a first operating mode, a call directed to the second subscriber line is switched to this subscriber line and is signaled for call acceptance on the first subscriber line. Preferably, in a second operating mode, a call directed to the second subscriber line is switched to a selected first subscriber line and is signaled for call acceptance on the second or on a further first subscriber line.

Additional features and advantages of the present invention are described in, and will be apparent from, the Detailed Description of the Preferred Embodiments and the Drawings.

#### **DESCRIPTION OF THE DRAWINGS**

Figure 1 shows a communication network having two communication systems and a number of first and second subscriber lines related to one another.

#### **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

Figure 1 shows a communication network having two private branch exchanges PABX1, PABX2 and two first subscriber lines S1, S2 and two second subscriber lines C1, C2. The first subscriber lines S1, S2 and the second subscriber lines C1, C2 have a respective secretary and manager telephone (not shown in more detail) associated with them. The first subscriber lines are called secretary lines and the second subscriber lines are called manager lines below. The manager line C1 and the secretary line S1 are associated with the private branch exchange PABX1, while the manager line C2 and the secretary line S2 are associated with the private branch exchange PABX2.

In a first operating mode, a call directed to a manager line C1 or C2 is switched directly to the respective manager line and is signaled on the secretary lines

S1 and S2 for call acceptance within a network-wide call acceptance group. In a second operating mode, a call directed to a manager line C1 or C2 is switched to a selected secretary line S1 or S2 and is signaled for call acceptance on the relevant manager line C1 or C2 and on the unselected secretary line S1 or S2. Preferably, 5 network-wide call acceptance groups need to be set up for this purpose. In this context, the manager line C1 and a respective virtual subscriber line for the secretary lines S1 and S2 are associated with a first call acceptance group. The manager line C2 and a respective further virtual subscriber line for the secretary lines S1 and S2 are associated with a second network-wide call acceptance group.

10 In an initial situation in the present example, call redirections RUL are set up from the manager line C1 to the secretary line S1 and from the manager line C2 to the secretary line S2. Memories STC1, STC2, STS1, STS2, respectively associated with a manager or secretary line C1, C2, S1, S2, store associated call redirection information RUI. The call redirection information contains a respective indication of 15 a point of origin of a call redirection and a respective indication of a call redirection destination.

If the call redirection destination for the manager line C1 is changed to the secretary line S2, for example within the context of selecting a stand-in destination for the secretary line S1, updated call redirection information RUI (C1, S2) is stored 20 in the memory STS1 associated with the secretary line S1. Alternatively, it is entirely possible for the updated call redirection information to be stored directly in the memory STS2 associated with the secretary line S2, or in a memory (not shown in more detail) for a number of subscriber lines. Once the call redirection information RUI (C1, S2) has been stored in the memory STS1 for the secretary line 25 S1, it is sent to a control unit CTRL associated with the manager line C1 as point of origin of the call redirection. The control unit CTRL also may be naturally associated with further subscriber lines.

Connecting lines emphasized in bold are used in Figure 1 to show existing call redirections from manager lines to secretary lines. A dotted connecting line 30 identifies a call redirection which has been cancelled. Updated call redirection information in a memory is illustrated by symbolized crossing-out of the respective previous call redirection information.

If a secretary line has been the call redirection destination for a number of manager lines, then, in a stand-in operating mode, once a stand-in destination selected for the relevant secretary line has been entered, messages containing updated call redirection information are sent to control units for manager lines which

5 had previously been the point of origin of a call redirection to the aforementioned secretary line.

The control unit CTRL checks whether a call redirection indicated by the call redirection information RUI (C1, S2) already has been set up. On the basis of the result of the check, a call redirection is set up. In the present case, the call

10 redirection information RUI (C1, S2) is used to set up a previously not yet existing call redirection RUL from the manager line C1 to the secretary line S2. Before a new call redirection is set up, a check should be carried out to determine whether the call redirection destination S2 indicated in the call redirection information RUI (C1, S2) exists and is in operation. Advantageously, the call redirection information RUI (C1,

15 S2) checked in the control unit CTRL is stored in the memory STC1 associated with the manager line C1 after the associated call redirection has been set up. This permits visual or audible presentation of the updated call redirection information RUI (C1, S2) on a subscriber terminal associated with the manager line, for example on the display of said subscriber terminal.

20 By way of example, the call redirection information checked in the control unit also can be complemented by information about activation or deactivation of a call redirection. This permits a call redirection which already has been set up to be cancelled after a check in the control unit CTRL.

Once the updated call redirection information RUI (C1, S2) has been stored

25 in the memory STC1 associated with the manager line C1, the updated call redirection information RUI (C1, S2) is sent to the secretary line S2, which presents the new call redirection destination. The call redirection information RUI (C1, S2) is preferably sent to the secretary line S2 within a call acceptance group with which the manager line C1 and the secretary lines S1 and S2 are associated. Such a measure

30 simplifies access monitoring, for example. The call redirection information RUI (C1, S2) sent to the secretary line S2 is complemented by an additional indication (not shown in more detail in Figure 1) of activation or deactivation of a call

redirection. In the present case, the call redirection information RUI (C1, S2) is complemented by an indication of the activation of the call redirection.

The memory STS2 associated with the secretary line S2 is searched for a comparison between call redirection information stored there and the call redirection information RUI (C1, S2) sent to secretary line S2. The call redirection information stored in the memory STS2 associated with the secretary line S2 is updated on the basis of the result of the comparison. In the present case, the call redirection information RUI (C1, S2) sent to the secretary line S2 is entered into the memory STS2. This permits, in particular, the updated call redirection information to be displayed on a subscriber terminal associated with the secretary line S2.

When the call redirection information stored in the memory STS2 associated with the secretary line S2 is compared with the call redirection information RUI (C1, S2) sent to the secretary line S2, the respective indications about point of origin of the call redirection are first checked for a match. If there is a match, the respective indications about the call redirection destination are checked.

If the indications about the call redirection destination match and the call redirection information RUI (C1, S2) sent indicates activation of a call redirection, the setup of a call redirection indicated by the call redirection information RUI (C1, S2) is displayed on a subscriber terminal associated with the secretary line S2. If the indications about the call redirection destination do not match, or the call redirection information RUI (C1, S2) sent indicates deactivation of a call redirection, the display for a call redirection from the respective manager line to the secretary line S2 is cleared on the associated subscriber terminal.

Although the present invention has been described with reference to specific embodiments, those of skill in the art will recognize that changes may be made thereto without departing from the spirit and scope of the invention as set forth in the hereafter appended claims.